

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO

Report Number: P938668

Luminaire Tested: HLB4LSFS5-850LM-3500K

Issue Date: 1/15/2025

Test Information

Test Method: LM-79-2019
Report Number: P938668
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2404364A001)
Test Lab:
Issue Date: 1/15/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: HLB4LSFS5-850LM-3500K
Description: 4IN SELECTABLE LUMENS, 90CRI, DIMMING TO 10%
Light Source: SELECTABLE CCT 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 925.0 lumens
Efficiency: N/A
Efficacy: 100.5 lumens/watt
Spacing Criteria (0/90/45): 1.3 / 1.3 / 1.38
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

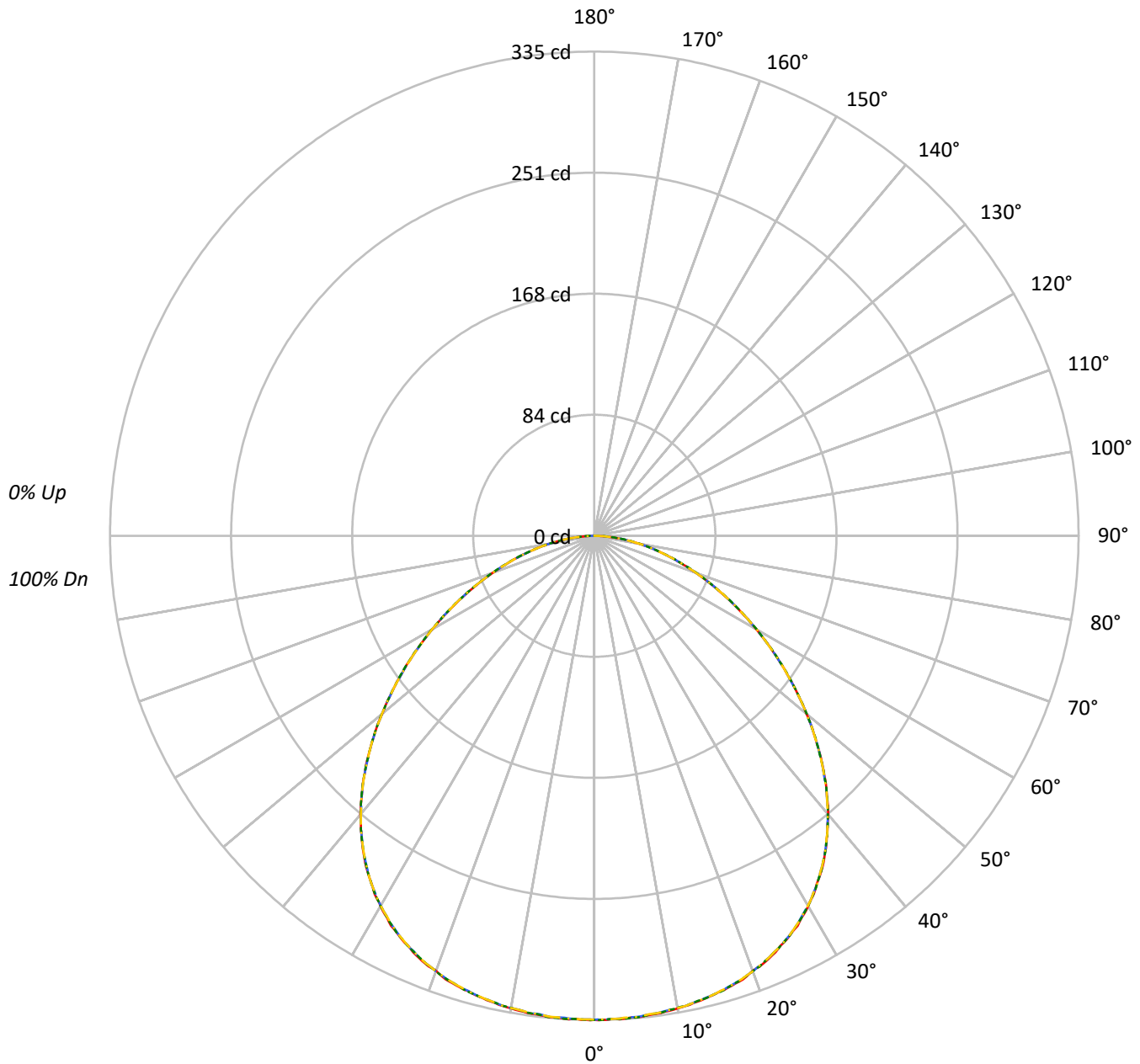
Input Watts (W): 9.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102
1	109	105	100	97	106	102	98	95	98	95	92	94	92	89	91	88	87
2	100	92	85	79	97	90	84	78	86	81	77	83	79	75	80	76	73
3	91	81	73	66	89	79	72	66	76	70	65	73	68	63	71	66	62
4	83	72	63	56	81	70	62	56	68	61	55	66	59	55	63	58	54
5	77	64	55	49	75	63	55	49	61	54	48	59	53	47	57	52	47
6	71	58	49	43	69	57	49	43	55	48	42	53	47	42	52	46	41
7	66	53	44	38	64	52	43	38	50	43	37	49	42	37	47	41	37
8	61	48	40	34	60	47	39	34	46	39	33	45	38	33	44	38	33
9	57	44	36	30	56	43	36	30	42	35	30	41	35	30	40	34	30
10	54	41	33	28	52	40	33	28	39	32	27	38	32	27	37	31	27

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	42147	42147	42147	42147
5°	42245	42258	42245	42258
10°	42427	42388	42427	42388
15°	42696	42696	42696	42696
20°	42897	42937	42897	42937
25°	43116	43088	43116	43088
30°	42985	42971	42985	42971
35°	42449	42388	42449	42388
40°	41351	41268	41351	41268
45°	39689	39689	39689	39689
50°	37513	37552	37513	37552
55°	35172	35194	35172	35194
60°	32595	32696	32595	32696
65°	29957	30106	29957	30106
70°	27413	27597	27413	27597
75°	25042	25285	25042	25285
80°	22684	22974	22684	22974
85°	19494	19782	19494	19782

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 89.5°

Luminance: 41822 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	31.8	3.4
10°-20°	92.6	10.0
20°-30°	142.9	15.5
30°-40°	172.2	18.6
40°-50°	171.5	18.5
50°-60°	143.3	15.5
60°-70°	100.2	10.8
70°-80°	54.9	5.9
80°-90°	15.6	1.7
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	267.3	28.9
0°-40°	439.5	47.5
0°-60°	754.3	81.5
0°-90°	925.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	925.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	335	335	335	335	335	
5°	334	334	334	334	334	32
15°	328	328	328	328	328	93
25°	310	310	310	310	310	143
35°	276	276	276	276	276	172
45°	223	223	223	223	223	172
55°	160	160	160	160	160	143
65°	101	101	101	101	101	100
75°	52	52	52	52	52	55
85°	14	14	14	14	14	15
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9
0.5°	335.2	334.9	334.6	334.7	335.1	334.7	334.6	334.9	335.2	334.9	334.6
1°	335.1	334.6	334.6	334.6	335.1	334.6	334.6	334.6	335.1	334.6	334.6
1.5°	335.1	334.8	334.8	334.7	334.8	334.7	334.8	334.8	335.1	334.8	334.8
2°	334.7	334.8	334.6	334.6	334.6	334.6	334.6	334.8	334.7	334.8	334.6
2.5°	334.6	334.6	334.6	334.6	334.5	334.6	334.6	334.6	334.6	334.6	334.6
3°	335.1	334.6	334.5	334.6	334.9	334.6	334.5	334.6	335.1	334.6	334.5
3.5°	334.8	334.8	334.2	334.3	334.8	334.3	334.2	334.8	334.8	334.8	334.2
4°	334.5	334.3	334.1	334.1	334.6	334.1	334.1	334.3	334.5	334.3	334.1
4.5°	334.1	334.1	334.1	334.1	334.5	334.1	334.1	334.1	334.1	334.1	334.1
5°	334.4	334.2	334.2	334.1	334.5	334.1	334.2	334.2	334.4	334.2	334.2
5.5°	334.4	334.1	334.1	333.9	334.5	333.9	334.1	334.1	334.4	334.1	334.1
6°	334.1	333.7	333.6	333.6	334.1	333.6	333.6	333.7	334.1	333.7	333.6
6.5°	333.7	333.6	333.2	333.6	333.5	333.6	333.2	333.6	333.7	333.6	333.2
7°	333.6	333.4	333.2	333.2	333.2	333.2	333.2	333.4	333.6	333.4	333.2
7.5°	333.6	333.2	333.1	333.1	333.4	333.1	333.1	333.2	333.6	333.2	333.1
8°	333.3	333.1	332.8	332.8	333.2	332.8	332.8	333.1	333.3	333.1	332.8
8.5°	332.9	332.7	332.4	332.7	332.6	332.7	332.4	332.7	332.9	332.7	332.4
9°	332.7	332.4	332.2	332.3	332.2	332.3	332.2	332.4	332.7	332.4	332.2
9.5°	332.4	332.2	331.8	332.1	332.0	332.1	331.8	332.2	332.4	332.2	331.8
10°	332.0	332.0	331.8	331.7	331.7	331.7	331.8	332.0	332.0	332.0	331.8
10.5°	331.7	331.7	331.6	331.5	331.4	331.5	331.6	331.7	331.7	331.7	331.6
11°	331.4	331.2	331.3	331.2	331.3	331.2	331.3	331.2	331.4	331.2	331.3
11.5°	331.1	330.8	330.8	330.7	330.8	330.7	330.8	330.8	331.1	330.8	330.8
12°	330.5	330.4	330.3	330.1	330.3	330.1	330.3	330.4	330.5	330.4	330.3
12.5°	330.1	330.0	329.8	329.7	329.8	329.7	329.8	330.0	330.1	330.0	329.8
13°	329.8	329.8	329.5	329.6	329.4	329.6	329.5	329.8	329.8	329.8	329.5
13.5°	329.2	329.4	328.9	329.4	329.2	329.4	328.9	329.4	329.2	329.4	328.9
14°	328.7	328.8	328.6	328.6	328.7	328.6	328.6	328.8	328.7	328.8	328.6
14.5°	328.3	328.1	328.1	327.9	328.1	327.9	328.1	328.1	328.3	328.1	328.1
15°	327.7	327.4	327.4	327.4	327.7	327.4	327.4	327.4	327.7	327.4	327.4
15.5°	327.0	326.9	326.8	326.9	327.3	326.9	326.8	326.9	327.0	326.9	326.8
16°	326.7	326.4	326.3	326.3	326.7	326.3	326.3	326.4	326.7	326.4	326.3
16.5°	326.1	325.9	325.6	325.9	325.8	325.9	325.6	325.9	326.1	325.9	325.6
17°	325.5	325.2	325.1	325.0	325.2	325.0	325.1	325.2	325.5	325.2	325.1
17.5°	324.8	324.5	324.4	324.4	324.5	324.4	324.4	324.5	324.8	324.5	324.4
18°	324.3	323.8	323.8	323.6	324.0	323.6	323.8	323.8	324.3	323.8	323.8
18.5°	323.8	323.1	323.1	323.0	323.1	323.0	323.1	323.1	323.8	323.1	323.1
19°	322.8	322.6	322.1	322.1	322.4	322.1	322.1	322.6	322.8	322.6	322.1
19.5°	321.5	321.6	321.3	321.5	321.6	321.5	321.3	321.6	321.5	321.6	321.3
20°	320.3	320.8	320.7	320.7	320.6	320.7	320.7	320.8	320.3	320.8	320.7
20.5°	319.7	320.0	319.6	319.8	319.7	319.8	319.6	320.0	319.7	320.0	319.6
21°	319.3	319.2	318.7	318.6	319.3	318.6	318.7	319.2	319.3	319.2	318.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	316.4	316.1	315.8	315.9	315.9	315.9	315.8	316.1	316.4	316.1	315.8
23°	315.3	315.0	314.8	314.8	314.7	314.8	314.8	315.0	315.3	315.0	314.8
23.5°	314.2	313.7	313.5	313.6	313.6	313.6	313.5	313.7	314.2	313.7	313.5
24°	312.9	312.9	312.6	312.4	312.6	312.4	312.6	312.9	312.9	312.9	312.6
24.5°	311.3	311.9	311.4	311.3	311.5	311.3	311.4	311.9	311.3	311.9	311.4
25°	310.5	310.2	310.2	310.1	310.3	310.1	310.2	310.2	310.5	310.2	310.2
25.5°	309.3	308.9	309.0	308.9	308.9	308.9	309.0	308.9	309.3	308.9	309.0
26°	308.0	307.8	307.7	307.7	307.9	307.7	307.7	307.8	308.0	307.8	307.7
26.5°	306.6	306.4	306.3	306.2	306.6	306.2	306.3	306.4	306.6	306.4	306.3
27°	305.4	305.1	304.9	304.8	305.0	304.8	304.9	305.1	305.4	305.1	304.9
27.5°	304.4	303.8	303.5	303.5	303.5	303.5	303.5	303.8	304.4	303.8	303.5
28°	302.5	302.1	302.0	302.0	302.1	302.0	302.0	302.1	302.5	302.1	302.0
28.5°	300.5	300.5	300.2	300.4	300.5	300.4	300.2	300.5	300.5	300.5	300.2
29°	299.2	299.0	298.7	298.7	298.9	298.7	298.7	299.0	299.2	299.0	298.7
29.5°	297.7	297.3	297.1	296.9	297.2	296.9	297.1	297.3	297.7	297.3	297.1
30°	295.8	295.6	295.5	295.3	295.7	295.3	295.5	295.6	295.8	295.6	295.5
30.5°	293.9	293.7	293.9	293.7	294.1	293.7	293.9	293.7	293.9	293.7	293.9
31°	292.4	292.0	292.0	292.0	292.2	292.0	292.0	292.0	292.4	292.0	292.0
31.5°	290.7	290.5	290.0	290.0	290.4	290.0	290.0	290.5	290.7	290.5	290.0
32°	288.5	288.5	288.1	288.1	288.6	288.1	288.1	288.5	288.5	288.5	288.1
32.5°	286.2	286.4	286.4	286.2	286.5	286.2	286.4	286.4	286.2	286.4	286.4
33°	284.4	284.4	284.6	284.3	284.2	284.3	284.6	284.4	284.4	284.4	284.6
33.5°	282.5	282.5	282.3	282.3	282.3	282.3	282.3	282.5	282.5	282.5	282.3
34°	280.4	280.5	280.0	280.1	280.4	280.1	280.0	280.5	280.4	280.5	280.0
34.5°	278.5	278.1	277.9	277.8	278.3	277.8	277.9	278.1	278.5	278.1	277.9
35°	276.3	275.7	275.8	275.7	275.9	275.7	275.8	275.7	276.3	275.7	275.8
35.5°	273.9	273.8	273.5	273.6	273.6	273.6	273.5	273.8	273.9	273.8	273.5
36°	271.4	271.6	271.2	271.4	271.5	271.4	271.2	271.6	271.4	271.6	271.2
36.5°	269.2	269.2	268.9	269.0	269.0	269.0	268.9	269.2	269.2	269.2	268.9
37°	266.9	266.7	266.5	266.5	266.6	266.5	266.5	266.7	266.9	266.7	266.5
37.5°	264.2	264.2	263.9	264.0	264.3	264.0	263.9	264.2	264.2	264.2	263.9
38°	261.8	261.9	261.6	261.6	261.8	261.6	261.6	261.9	261.8	261.9	261.6
38.5°	259.3	259.4	259.0	259.1	259.3	259.1	259.0	259.4	259.3	259.4	259.0
39°	256.5	256.5	256.5	256.5	256.6	256.5	256.5	256.5	256.5	256.5	256.5
39.5°	254.1	254.0	253.9	253.9	253.8	253.9	253.9	254.0	254.1	254.0	253.9
40°	251.7	251.4	251.2	251.3	251.2	251.3	251.2	251.4	251.7	251.4	251.2
40.5°	248.9	248.6	248.4	248.5	248.7	248.5	248.4	248.6	248.9	248.6	248.4
41°	246.1	245.8	245.7	245.7	246.2	245.7	245.7	245.8	246.1	245.8	245.7
41.5°	243.2	243.1	243.0	243.0	243.1	243.0	243.0	243.1	243.2	243.1	243.0
42°	240.3	240.3	240.3	240.2	240.4	240.2	240.3	240.3	240.3	240.3	240.3
42.5°	237.6	237.5	237.4	237.4	237.6	237.4	237.4	237.5	237.6	237.5	237.4
43°	234.8	234.6	234.5	234.5	234.8	234.5	234.5	234.6	234.8	234.6	234.5
43.5°	232.0	231.6	231.5	231.6	231.8	231.6	231.5	231.6	232.0	231.6	231.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	223.0	222.7	222.7	222.8	223.0	222.8	222.7	222.7	223.0	222.7	222.7
45.5°	219.8	219.7	219.7	219.7	219.6	219.7	219.7	219.7	219.8	219.7	219.7
46°	216.7	216.8	216.8	216.7	216.6	216.7	216.8	216.8	216.7	216.8	216.8
46.5°	213.6	213.7	213.7	213.7	213.6	213.7	213.7	213.7	213.6	213.7	213.7
47°	210.5	210.5	210.6	210.5	210.5	210.5	210.6	210.5	210.5	210.5	210.6
47.5°	207.5	207.2	207.3	207.3	207.7	207.3	207.3	207.2	207.5	207.2	207.3
48°	204.4	204.3	204.2	204.2	204.5	204.2	204.2	204.3	204.4	204.3	204.2
48.5°	201.4	201.3	201.3	201.2	201.3	201.2	201.3	201.3	201.4	201.3	201.3
49°	198.3	198.2	198.1	198.1	198.2	198.1	198.1	198.2	198.3	198.2	198.1
49.5°	194.9	194.9	194.8	194.9	195.1	194.9	194.8	194.9	194.9	194.9	194.8
50°	191.6	191.7	191.7	191.9	191.8	191.9	191.7	191.7	191.6	191.7	191.7
50.5°	188.6	188.5	188.5	188.8	188.6	188.8	188.5	188.5	188.6	188.5	188.5
51°	185.5	185.4	185.4	185.5	185.6	185.5	185.4	185.4	185.5	185.4	185.4
51.5°	182.2	182.2	182.3	182.3	182.4	182.3	182.3	182.2	182.2	182.2	182.3
52°	179.0	179.0	179.0	179.1	179.2	179.1	179.0	179.0	179.0	179.0	179.0
52.5°	175.9	175.8	175.9	176.0	176.0	176.0	175.9	175.8	175.9	175.8	175.9
53°	172.8	172.7	172.7	172.8	172.9	172.8	172.7	172.7	172.8	172.7	172.7
53.5°	169.7	169.4	169.5	169.7	169.8	169.7	169.5	169.4	169.7	169.4	169.5
54°	166.3	166.2	166.3	166.5	166.8	166.5	166.3	166.2	166.3	166.2	166.3
54.5°	163.1	163.1	163.2	163.5	163.6	163.5	163.2	163.1	163.1	163.1	163.2
55°	160.3	160.1	160.1	160.4	160.4	160.4	160.1	160.1	160.3	160.1	160.1
55.5°	157.2	156.9	157.0	157.2	157.4	157.2	157.0	156.9	157.2	156.9	157.0
56°	153.9	153.7	153.9	154.0	154.0	154.0	153.9	153.7	153.9	153.7	153.9
56.5°	150.9	150.7	150.7	150.9	151.1	150.9	150.7	150.7	150.9	150.7	150.7
57°	147.8	147.7	147.6	147.8	148.0	147.8	147.6	147.7	147.8	147.7	147.6
57.5°	144.6	144.4	144.5	144.6	145.0	144.6	144.5	144.4	144.6	144.4	144.5
58°	141.6	141.4	141.5	141.7	141.7	141.7	141.5	141.4	141.6	141.4	141.5
58.5°	138.5	138.5	138.5	138.7	138.8	138.7	138.5	138.5	138.5	138.5	138.5
59°	135.3	135.4	135.5	135.7	135.7	135.7	135.5	135.4	135.3	135.4	135.5
59.5°	132.4	132.4	132.5	132.5	132.8	132.5	132.5	132.4	132.4	132.4	132.5
60°	129.5	129.4	129.6	129.6	129.9	129.6	129.6	129.4	129.5	129.4	129.6
60.5°	126.4	126.4	126.5	126.7	126.9	126.7	126.5	126.4	126.4	126.4	126.5
61°	123.5	123.5	123.6	123.8	123.8	123.8	123.6	123.5	123.5	123.5	123.6
61.5°	120.5	120.6	120.8	120.8	121.0	120.8	120.8	120.6	120.5	120.6	120.8
62°	117.6	117.7	117.8	118.0	118.0	118.0	117.8	117.7	117.6	117.7	117.8
62.5°	114.7	114.8	114.9	115.1	115.2	115.1	114.9	114.8	114.7	114.8	114.9
63°	111.8	111.8	112.0	112.1	112.2	112.1	112.0	111.8	111.8	111.8	112.0
63.5°	109.0	109.1	109.2	109.3	109.5	109.3	109.2	109.1	109.0	109.1	109.2
64°	106.2	106.3	106.5	106.6	106.6	106.6	106.5	106.3	106.2	106.3	106.5
64.5°	103.3	103.5	103.7	103.7	103.7	103.7	103.7	103.5	103.3	103.5	103.7
65°	100.6	100.8	100.9	101.0	101.1	101.0	100.9	100.8	100.6	100.8	100.9
65.5°	98.0	98.0	98.2	98.3	98.4	98.3	98.2	98.0	98.0	98.0	98.2
66°	95.3	95.3	95.5	95.5	95.6	95.5	95.5	95.3	95.3	95.3	95.5

TEST NUMBER: P938668

CATALOG NUMBER: HLB4LSFS5-850LM-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	87.3	87.4	87.4	87.6	87.7	87.6	87.4	87.4	87.3	87.4	87.4
68°	84.7	84.7	84.8	85.0	85.1	85.0	84.8	84.7	84.7	84.7	84.8
68.5°	82.1	82.2	82.2	82.4	82.5	82.4	82.2	82.2	82.1	82.2	82.2
69°	79.5	79.6	79.8	79.9	79.9	79.9	79.8	79.6	79.5	79.6	79.8
69.5°	77.1	77.1	77.2	77.4	77.5	77.4	77.2	77.1	77.1	77.1	77.2
70°	74.5	74.6	74.7	74.9	75.0	74.9	74.7	74.6	74.5	74.6	74.7
70.5°	72.1	72.1	72.3	72.5	72.6	72.5	72.3	72.1	72.1	72.1	72.3
71°	69.7	69.7	69.8	70.1	70.2	70.1	69.8	69.7	69.7	69.7	69.8
71.5°	67.3	67.3	67.3	67.7	67.8	67.7	67.3	67.3	67.3	67.3	67.3
72°	65.0	65.0	65.0	65.3	65.4	65.3	65.0	65.0	65.0	65.0	65.0
72.5°	62.6	62.6	62.8	63.0	63.1	63.0	62.8	62.6	62.6	62.6	62.8
73°	60.4	60.3	60.5	60.7	60.8	60.7	60.5	60.3	60.4	60.3	60.5
73.5°	58.2	58.0	58.2	58.4	58.6	58.4	58.2	58.0	58.2	58.0	58.2
74°	55.8	55.8	55.8	56.2	56.4	56.2	55.8	55.8	55.8	55.8	55.8
74.5°	53.7	53.5	53.7	53.9	54.2	53.9	53.7	53.5	53.7	53.5	53.7
75°	51.5	51.5	51.5	51.8	52.0	51.8	51.5	51.5	51.5	51.5	51.5
75.5°	49.4	49.3	49.4	49.6	49.8	49.6	49.4	49.3	49.4	49.3	49.4
76°	47.2	47.2	47.2	47.4	47.7	47.4	47.2	47.2	47.2	47.2	47.2
76.5°	45.2	45.1	45.2	45.3	45.5	45.3	45.2	45.1	45.2	45.1	45.2
77°	43.1	43.0	43.1	43.4	43.5	43.4	43.1	43.0	43.1	43.0	43.1
77.5°	41.1	41.0	41.1	41.3	41.4	41.3	41.1	41.0	41.1	41.0	41.1
78°	39.0	39.0	39.0	39.3	39.5	39.3	39.0	39.0	39.0	39.0	39.0
78.5°	37.1	37.0	37.1	37.3	37.6	37.3	37.1	37.0	37.1	37.0	37.1
79°	35.1	35.1	35.2	35.3	35.7	35.3	35.2	35.1	35.1	35.1	35.2
79.5°	33.2	33.2	33.2	33.4	33.6	33.4	33.2	33.2	33.2	33.2	33.2
80°	31.3	31.2	31.3	31.4	31.7	31.4	31.3	31.2	31.3	31.2	31.3
80.5°	29.4	29.5	29.4	29.5	29.7	29.5	29.4	29.5	29.4	29.5	29.4
81°	27.5	27.5	27.5	27.7	27.9	27.7	27.5	27.5	27.5	27.5	27.5
81.5°	25.6	25.7	25.7	25.9	26.0	25.9	25.7	25.7	25.6	25.7	25.7
82°	23.8	23.8	23.9	24.1	24.2	24.1	23.9	23.8	23.8	23.8	23.9
82.5°	22.0	22.1	22.2	22.3	22.3	22.3	22.2	22.1	22.0	22.1	22.2
83°	20.3	20.3	20.4	20.5	20.6	20.5	20.4	20.3	20.3	20.3	20.4
83.5°	18.5	18.5	18.6	18.8	18.9	18.8	18.6	18.5	18.5	18.5	18.6
84°	16.8	16.8	16.9	17.0	17.1	17.0	16.9	16.8	16.8	16.8	16.9
84.5°	15.1	15.1	15.2	15.3	15.4	15.3	15.2	15.1	15.1	15.1	15.2
85°	13.5	13.5	13.6	13.7	13.7	13.7	13.6	13.5	13.5	13.5	13.6
85.5°	11.8	11.8	11.8	11.9	12.0	11.9	11.8	11.8	11.8	11.8	11.8
86°	10.2	10.2	10.3	10.3	10.3	10.3	10.3	10.2	10.2	10.2	10.3
86.5°	8.5	8.5	8.8	8.9	9.1	8.9	8.8	8.5	8.5	8.5	8.8
87°	6.9	7.2	7.4	7.4	7.9	7.4	7.4	7.2	6.9	7.2	7.4
87.5°	5.3	5.8	6.0	6.0	6.6	6.0	6.0	5.8	5.3	5.8	6.0
88°	4.2	4.4	4.6	4.9	5.4	4.9	4.6	4.4	4.2	4.4	4.6
88.5°	3.1	3.2	3.4	4.1	4.6	4.1	3.4	3.2	3.1	3.2	3.4



TEST NUMBER: P938668
CATALOG NUMBER: HLB4LSFS5-850LM-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P938668

CATALOG NUMBER: HLB4LSFS5-850LM-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	334.9	334.9	334.9	334.9	334.9	334.9
0.5°	334.7	335.1	334.7	334.6	334.9	335.2
1°	334.6	335.1	334.6	334.6	334.6	335.1
1.5°	334.7	334.8	334.7	334.8	334.8	335.1
2°	334.6	334.6	334.6	334.6	334.8	334.7
2.5°	334.6	334.5	334.6	334.6	334.6	334.6
3°	334.6	334.9	334.6	334.5	334.6	335.1
3.5°	334.3	334.8	334.3	334.2	334.8	334.8
4°	334.1	334.6	334.1	334.1	334.3	334.5
4.5°	334.1	334.5	334.1	334.1	334.1	334.1
5°	334.1	334.5	334.1	334.2	334.2	334.4
5.5°	333.9	334.5	333.9	334.1	334.1	334.4
6°	333.6	334.1	333.6	333.6	333.7	334.1
6.5°	333.6	333.5	333.6	333.2	333.6	333.7
7°	333.2	333.2	333.2	333.2	333.4	333.6
7.5°	333.1	333.4	333.1	333.1	333.2	333.6
8°	332.8	333.2	332.8	332.8	333.1	333.3
8.5°	332.7	332.6	332.7	332.4	332.7	332.9
9°	332.3	332.2	332.3	332.2	332.4	332.7
9.5°	332.1	332.0	332.1	331.8	332.2	332.4
10°	331.7	331.7	331.7	331.8	332.0	332.0
10.5°	331.5	331.4	331.5	331.6	331.7	331.7
11°	331.2	331.3	331.2	331.3	331.2	331.4
11.5°	330.7	330.8	330.7	330.8	330.8	331.1
12°	330.1	330.3	330.1	330.3	330.4	330.5
12.5°	329.7	329.8	329.7	329.8	330.0	330.1
13°	329.6	329.4	329.6	329.5	329.8	329.8
13.5°	329.4	329.2	329.4	328.9	329.4	329.2
14°	328.6	328.7	328.6	328.6	328.8	328.7
14.5°	327.9	328.1	327.9	328.1	328.1	328.3
15°	327.4	327.7	327.4	327.4	327.4	327.7
15.5°	326.9	327.3	326.9	326.8	326.9	327.0
16°	326.3	326.7	326.3	326.3	326.4	326.7
16.5°	325.9	325.8	325.9	325.6	325.9	326.1
17°	325.0	325.2	325.0	325.1	325.2	325.5
17.5°	324.4	324.5	324.4	324.4	324.5	324.8
18°	323.6	324.0	323.6	323.8	323.8	324.3
18.5°	323.0	323.1	323.0	323.1	323.1	323.8
19°	322.1	322.4	322.1	322.1	322.6	322.8
19.5°	321.5	321.6	321.5	321.3	321.6	321.5
20°	320.7	320.6	320.7	320.7	320.8	320.3
20.5°	319.8	319.7	319.8	319.6	320.0	319.7
21°	318.6	319.3	318.6	318.7	319.2	319.3



TEST NUMBER: P938668

CATALOG NUMBER: HLB4LSFS5-850LM-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	315.9	315.9	315.9	315.8	316.1	316.4
23°	314.8	314.7	314.8	314.8	315.0	315.3
23.5°	313.6	313.6	313.6	313.5	313.7	314.2
24°	312.4	312.6	312.4	312.6	312.9	312.9
24.5°	311.3	311.5	311.3	311.4	311.9	311.3
25°	310.1	310.3	310.1	310.2	310.2	310.5
25.5°	308.9	308.9	308.9	309.0	308.9	309.3
26°	307.7	307.9	307.7	307.7	307.8	308.0
26.5°	306.2	306.6	306.2	306.3	306.4	306.6
27°	304.8	305.0	304.8	304.9	305.1	305.4
27.5°	303.5	303.5	303.5	303.5	303.8	304.4
28°	302.0	302.1	302.0	302.0	302.1	302.5
28.5°	300.4	300.5	300.4	300.2	300.5	300.5
29°	298.7	298.9	298.7	298.7	299.0	299.2
29.5°	296.9	297.2	296.9	297.1	297.3	297.7
30°	295.3	295.7	295.3	295.5	295.6	295.8
30.5°	293.7	294.1	293.7	293.9	293.7	293.9
31°	292.0	292.2	292.0	292.0	292.0	292.4
31.5°	290.0	290.4	290.0	290.0	290.5	290.7
32°	288.1	288.6	288.1	288.1	288.5	288.5
32.5°	286.2	286.5	286.2	286.4	286.4	286.2
33°	284.3	284.2	284.3	284.6	284.4	284.4
33.5°	282.3	282.3	282.3	282.3	282.5	282.5
34°	280.1	280.4	280.1	280.0	280.5	280.4
34.5°	277.8	278.3	277.8	277.9	278.1	278.5
35°	275.7	275.9	275.7	275.8	275.7	276.3
35.5°	273.6	273.6	273.6	273.5	273.8	273.9
36°	271.4	271.5	271.4	271.2	271.6	271.4
36.5°	269.0	269.0	269.0	268.9	269.2	269.2
37°	266.5	266.6	266.5	266.5	266.7	266.9
37.5°	264.0	264.3	264.0	263.9	264.2	264.2
38°	261.6	261.8	261.6	261.6	261.9	261.8
38.5°	259.1	259.3	259.1	259.0	259.4	259.3
39°	256.5	256.6	256.5	256.5	256.5	256.5
39.5°	253.9	253.8	253.9	253.9	254.0	254.1
40°	251.3	251.2	251.3	251.2	251.4	251.7
40.5°	248.5	248.7	248.5	248.4	248.6	248.9
41°	245.7	246.2	245.7	245.7	245.8	246.1
41.5°	243.0	243.1	243.0	243.0	243.1	243.2
42°	240.2	240.4	240.2	240.3	240.3	240.3
42.5°	237.4	237.6	237.4	237.4	237.5	237.6
43°	234.5	234.8	234.5	234.5	234.6	234.8
43.5°	231.6	231.8	231.6	231.5	231.6	232.0



TEST NUMBER: P938668

CATALOG NUMBER: HLB4LSFS5-850LM-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	222.8	223.0	222.8	222.7	222.7	223.0
45.5°	219.7	219.6	219.7	219.7	219.7	219.8
46°	216.7	216.6	216.7	216.8	216.8	216.7
46.5°	213.7	213.6	213.7	213.7	213.7	213.6
47°	210.5	210.5	210.5	210.6	210.5	210.5
47.5°	207.3	207.7	207.3	207.3	207.2	207.5
48°	204.2	204.5	204.2	204.2	204.3	204.4
48.5°	201.2	201.3	201.2	201.3	201.3	201.4
49°	198.1	198.2	198.1	198.1	198.2	198.3
49.5°	194.9	195.1	194.9	194.8	194.9	194.9
50°	191.9	191.8	191.9	191.7	191.7	191.6
50.5°	188.8	188.6	188.8	188.5	188.5	188.6
51°	185.5	185.6	185.5	185.4	185.4	185.5
51.5°	182.3	182.4	182.3	182.3	182.2	182.2
52°	179.1	179.2	179.1	179.0	179.0	179.0
52.5°	176.0	176.0	176.0	175.9	175.8	175.9
53°	172.8	172.9	172.8	172.7	172.7	172.8
53.5°	169.7	169.8	169.7	169.5	169.4	169.7
54°	166.5	166.8	166.5	166.3	166.2	166.3
54.5°	163.5	163.6	163.5	163.2	163.1	163.1
55°	160.4	160.4	160.4	160.1	160.1	160.3
55.5°	157.2	157.4	157.2	157.0	156.9	157.2
56°	154.0	154.0	154.0	153.9	153.7	153.9
56.5°	150.9	151.1	150.9	150.7	150.7	150.9
57°	147.8	148.0	147.8	147.6	147.7	147.8
57.5°	144.6	145.0	144.6	144.5	144.4	144.6
58°	141.7	141.7	141.7	141.5	141.4	141.6
58.5°	138.7	138.8	138.7	138.5	138.5	138.5
59°	135.7	135.7	135.7	135.5	135.4	135.3
59.5°	132.5	132.8	132.5	132.5	132.4	132.4
60°	129.6	129.9	129.6	129.6	129.4	129.5
60.5°	126.7	126.9	126.7	126.5	126.4	126.4
61°	123.8	123.8	123.8	123.6	123.5	123.5
61.5°	120.8	121.0	120.8	120.8	120.6	120.5
62°	118.0	118.0	118.0	117.8	117.7	117.6
62.5°	115.1	115.2	115.1	114.9	114.8	114.7
63°	112.1	112.2	112.1	112.0	111.8	111.8
63.5°	109.3	109.5	109.3	109.2	109.1	109.0
64°	106.6	106.6	106.6	106.5	106.3	106.2
64.5°	103.7	103.7	103.7	103.7	103.5	103.3
65°	101.0	101.1	101.0	100.9	100.8	100.6
65.5°	98.3	98.4	98.3	98.2	98.0	98.0
66°	95.5	95.6	95.5	95.5	95.3	95.3



TEST NUMBER: P938668

CATALOG NUMBER: HLB4LSFS5-850LM-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	87.6	87.7	87.6	87.4	87.4	87.3
68°	85.0	85.1	85.0	84.8	84.7	84.7
68.5°	82.4	82.5	82.4	82.2	82.2	82.1
69°	79.9	79.9	79.9	79.8	79.6	79.5
69.5°	77.4	77.5	77.4	77.2	77.1	77.1
70°	74.9	75.0	74.9	74.7	74.6	74.5
70.5°	72.5	72.6	72.5	72.3	72.1	72.1
71°	70.1	70.2	70.1	69.8	69.7	69.7
71.5°	67.7	67.8	67.7	67.3	67.3	67.3
72°	65.3	65.4	65.3	65.0	65.0	65.0
72.5°	63.0	63.1	63.0	62.8	62.6	62.6
73°	60.7	60.8	60.7	60.5	60.3	60.4
73.5°	58.4	58.6	58.4	58.2	58.0	58.2
74°	56.2	56.4	56.2	55.8	55.8	55.8
74.5°	53.9	54.2	53.9	53.7	53.5	53.7
75°	51.8	52.0	51.8	51.5	51.5	51.5
75.5°	49.6	49.8	49.6	49.4	49.3	49.4
76°	47.4	47.7	47.4	47.2	47.2	47.2
76.5°	45.3	45.5	45.3	45.2	45.1	45.2
77°	43.4	43.5	43.4	43.1	43.0	43.1
77.5°	41.3	41.4	41.3	41.1	41.0	41.1
78°	39.3	39.5	39.3	39.0	39.0	39.0
78.5°	37.3	37.6	37.3	37.1	37.0	37.1
79°	35.3	35.7	35.3	35.2	35.1	35.1
79.5°	33.4	33.6	33.4	33.2	33.2	33.2
80°	31.4	31.7	31.4	31.3	31.2	31.3
80.5°	29.5	29.7	29.5	29.4	29.5	29.4
81°	27.7	27.9	27.7	27.5	27.5	27.5
81.5°	25.9	26.0	25.9	25.7	25.7	25.6
82°	24.1	24.2	24.1	23.9	23.8	23.8
82.5°	22.3	22.3	22.3	22.2	22.1	22.0
83°	20.5	20.6	20.5	20.4	20.3	20.3
83.5°	18.8	18.9	18.8	18.6	18.5	18.5
84°	17.0	17.1	17.0	16.9	16.8	16.8
84.5°	15.3	15.4	15.3	15.2	15.1	15.1
85°	13.7	13.7	13.7	13.6	13.5	13.5
85.5°	11.9	12.0	11.9	11.8	11.8	11.8
86°	10.3	10.3	10.3	10.3	10.2	10.2
86.5°	8.9	9.1	8.9	8.8	8.5	8.5
87°	7.4	7.9	7.4	7.4	7.2	6.9
87.5°	6.0	6.6	6.0	6.0	5.8	5.3
88°	4.9	5.4	4.9	4.6	4.4	4.2
88.5°	4.1	4.6	4.1	3.4	3.2	3.1



TEST NUMBER: P938668

CATALOG NUMBER: HLB4LSFS5-850LM-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270° - · - 135°-315°







21.5°	318.3	318.1	318.0	317.7	317.9	317.7	318.0	318.1	318.3	318.1	318.0
22°	317.4	317.0	316.9	316.8	316.8	316.8	316.9	317.0	317.4	317.0	316.9



44°	228.8	228.7	228.6	228.7	228.7	228.7	228.6	228.7	228.8	228.7	228.6
44.5°	225.9	225.9	225.6	225.8	225.9	225.8	225.6	225.9	225.9	225.9	225.6



66.5°	92.5	92.6	92.7	92.8	92.9	92.8	92.7	92.6	92.5	92.6	92.7
67°	89.8	90.0	90.0	90.3	90.3	90.3	90.0	90.0	89.8	90.0	90.0



89°	1.9	2.2	2.6	3.2	3.7	3.2	2.6	2.2	1.9	2.2	2.6
89.5°	0.8	1.4	2.0	2.5	2.9	2.5	2.0	1.4	0.8	1.4	2.0





21.5°	317.7	317.9	317.7	318.0	318.1	318.3
22°	316.8	316.8	316.8	316.9	317.0	317.4



44°	228.7	228.7	228.7	228.6	228.7	228.8
44.5°	225.8	225.9	225.8	225.6	225.9	225.9



66.5°	92.8	92.9	92.8	92.7	92.6	92.5
67°	90.3	90.3	90.3	90.0	90.0	89.8



89°	3.2	3.7	3.2	2.6	2.2	1.9
89.5°	2.5	2.9	2.5	2.0	1.4	0.8



(END OF REPORT)